portion, which is deeply invaginated in a very narrow caudal portion, presents a complete analogy of form and dimensions with the apparatus of fixation of the *Bothriocephalus.*—*Comptes Rendus*, Sept. 21, 1863, p. 569.

On the Structure of the Nervous System in the Gasteropodous Mollusca. By Salvatore Trinchese.

The types investigated by the author are *Helix pomatia*, *Arion rufus*, and *Lymnæus stagnalis*.

In all the nervous centres of these animals there are—

1. Round or pyriform cells, of variable dimensions, enveloped by a thick sheath of conjunctive tissue.

2. Small cells, of irregularly triangular form, round which no envelope is perceived.

3. Free nuclei like those met with in the grey substance of the cephalorachidian system in the Vertebrata.

In these animals there are no apolar or unipolar cells, and bipolar cells are rare. The cells usually present four prolongations. Each cell emits a prolongation to each of the cells surrounding it, whilst other processes pass between the latter to other cells at a greater or less distance.

The nervous cells generally occupy the periphery of the ganglia. The central portion of the latter is occupied only by nervous fibres and conjunctive tissue. The nervous cells of one ganglion are never all of the same dimensions or of the same form. The largest cells generally form the stratum nearest the periphery, and the cells diminish in size towards the centre of the ganglion. The deepest stratum is formed of very small cells and free nuclei. This arrangement shows that these elements are in a state of continual development.

The two cerebroid ganglia are formed, in their upper part, of large round cells and of pyriform cells. These elements, which are arranged in groups, all emit processes which go to form nerves. The large round cells are placed at nearly equal distances from each other. In the intervals between the round cells there are constantly pyriform cells, of which the processes cross. In the lower region of the two cerebroid masses, very small triangular cells are observed.

At the anterior part of these masses there are, in *Helix* and *Arion*, four small ganglia, of the nature of those which have been described under the name of *accessory cerebroid ganglia*. These are concealed beneath the envelopes of the cerebrum, and can only be seen when the latter are rendered transparent by reagents and the organ is slightly magnified. Of these ganglia the two outer ones must be called *optic ganglia*, as they give origin to the optic nerves. They consist of free nuclei and of nervous fibres proceeding from the anterior part of the cerebroid masses. The free nuclei alone occupy the outer portion of the ganglion, and the nervous fibres the inner part; the line of separation is very distinct. The two inner ganglia are composed of voluminous cells pressed against each other.

On the course of the nerves connecting the cerebroid masses with the pedal ganglion there is a small ganglion composed of cells united

in groups, the arrangement of which recalls that of the compartments of an orange.

In the pedal or abdominal ganglion, which is composed of several medullary nuclei, there are likewise very marked differences of structure. In a longitudinal section of one of the sides of the ganglion (in the *Helix*) four groups of pyriform cells are seen occupying all the upper and posterior region. In the lower region there is a group of small round cells. If a transverse section be made in the upper region, these groups of cells are seen separated by thick partitions of conjunctive tissue. Of these groups, the two lateral consist of small round cells, all communicating by numerous cylindraxes. The median groups are composed of cells three or four times as large as the preceding, and form a very regular circle. At the centre of this circle there is a cell, the diameter of which is three or four times that of those forming the circumference; to the latter it sends off numerous processes.

The peripheral nerves are formed of very delicate tubes, having in their walls nuclei similar to those which are observed in the higher animals in the embryonal state. The mode of their termination in the muscles is remarkable. The nervous element, on arriving at the muscular fibre, loses its proper wall, and the cylindraxis alone penetrates the muscle, dividing into two very slender filaments. These take opposite directions, each traversing one-half of the muscular fibre, on arriving at the extremities of which they terminate in very fine points.

To show the cylindraxis in the interior of the muscular fibre, and prove that it does not creep along its surface, the author made transverse sections of muscular bundles, and ascertained that the cylindraxis occupies the centre of each fibre. In some, two cylindraxes are observed, one of which is finer than the other.—*Comptes Rendus*, Oct. 12, 1863, p. 629.

On the Chanco or Golden Wolf (Canis Chanco).

By Dr. J. E. Gray, F.R.S., &c.

Lady Augustus Hervey has kindly presented to the British Museum a fine specimen of the skin of a Wolf, which was shot by her brother, Lieut. W. P. Hodnell, of H.M.'s 54th Regiment, in Chinese Tartary. It is a very showy animal, rather larger than the common European Wolf.

Fur fulvous, on the back longer, rigid, with intermixed black and grey hairs; the throat, chest, belly, and inside of the legs pure white; head pale grey-brown; forehead grizzled with short black and grey hairs.

Hab. Chinese Tartary. Called *Chanco*.

The skull is very like, and has the same teeth as, the European Wolf (*C. Lupus*). The animal is very like a Common Wolf, but rather shorter in the legs; and the ears, the sides of the body, and outside of the limbs are covered with short pale fulvous hairs.

The length of its head and body is 42 inches; tail 15 inches.—*Proc. Zool. Soc.* March 24, 1863.